

$D_{s0}^*(2317)^\pm$
 $I(J^P) = 0(0^+)$
 J, P need confirmation.

AUBERT 06P does not observe neutral and doubly charged partners
of the $D_{s0}^*(2317)^\pm$.
 $D_{s0}^*(2317)^\pm$ MASS
The fit includes $D^\pm, D^0, D_s^\pm, D^{*\pm}, D^{*0}, D_s^{*\pm}, D_1(2420)^0, D_2^{*}(2460)^0$,
and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
2317.8±0.6 OUR FIT		Error includes scale factor of 1.1.		
2318.0±1.0 OUR AVERAGE		Error includes scale factor of 1.4.		
2319.6±0.2±1.4	3180	AUBERT	06P BABR	$10.6 e^+ e^- \rightarrow D_s^+ \pi^0 X$
2317.3±0.4±0.8	1022	¹ AUBERT	04E BABR	$10.6 e^+ e^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2317.2±1.3	88	² AUBERT,B	04S BABR	$B \rightarrow D_{s0}^{(*)}(2317) + \bar{D}^{(*)}$
2317.2±0.5±0.9	761	³ MIKAMI	04 BELL	$10.6 e^+ e^-$
2316.8±0.4±3.0	1267 ± 53	^{3,4} AUBERT	03G BABR	$10.6 e^+ e^-$
2317.6±1.3	273 ± 33	^{3,5} AUBERT	03G BABR	$10.6 e^+ e^-$
2319.8±2.1±2.0	24	³ KROKOVNY	03B BELL	$10.6 e^+ e^-$
1 Supersedes AUBERT 03G. 2 Systematic errors not evaluated. 3 Not independent of the corresponding $m_{D_{s0}^*(2317)} - m_{D_s}$. 4 From $D_s^+ \rightarrow K^+ K^- \pi^+$ decay. 5 From $D_s^+ \rightarrow K^+ K^- \pi^+ \pi^0$ decay.				

 $m_{D_{s0}^*(2317)^\pm} = m_{D_s^\pm}$
The fit includes $D^\pm, D^0, D_s^\pm, D^{*\pm}, D^{*0}, D_s^{*\pm}, D_1(2420)^0, D_2^{*}(2460)^0$,
and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
349.3±0.6 OUR FIT		Error includes scale factor of 1.1.		
349.2±0.7 OUR AVERAGE				
348.7±0.5±0.7	761	MIKAMI	04 BELL	$10.6 e^+ e^-$
350.0±1.2±1.0	135	BESSON	03 CLE2	$10.6 e^+ e^-$
351.3±2.1±1.9	24	⁶ KROKOVNY	03B BELL	$10.6 e^+ e^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
349.6±0.4±3.0	1267	^{7,8} AUBERT	03G BABR	$10.6 e^+ e^-$
350.2±1.3	273	^{9,10} AUBERT	03G BABR	$10.6 e^+ e^-$
6 Recalculated by us using $m_{D_s^+} = 1968.5 \pm 0.6$ MeV. 7 From $D_s^+ \rightarrow K^+ K^- \pi^+$ decay. 8 Recalculated by us using $m_{D_s^+} = 1967.20 \pm 0.03$ MeV. 9 From $D_s^+ \rightarrow K^+ K^- \pi^+ \pi^0$ decay. 10 Recalculated by us using $m_{D_s^+} = 1967.4 \pm 0.2$ MeV. Systematic errors not estimated.				

 $D_{s0}^*(2317)^\pm$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
< 3.8	95	3180	AUBERT	06P BABR	$10.6 e^+ e^- \rightarrow D_s^+ \pi^0 X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 4.6	90	761	MIKAMI	04 BELL	$10.6 e^+ e^-$
< 10			AUBERT	03G BABR	$10.6 e^+ e^-$
< 7	90	135	BESSON	03 CLE2	$10.6 e^+ e^-$

NODE=M172

NODE=M172

NODE=M172M

NODE=M172M

NODE=M172M

OCCUR=2

NODE=M172M;LINKAGE=AU

NODE=M172M;LINKAGE=AB

NODE=M172M;LINKAGE=B1

NODE=M172M;LINKAGE=A1

NODE=M172M;LINKAGE=A2

NODE=M172DM

NODE=M172DM

NODE=M172DM

OCCUR=2

NODE=M172DM;LINKAGE=K3

NODE=M172DM;LINKAGE=A1

NODE=M172DM;LINKAGE=C1

NODE=M172DM;LINKAGE=A2

NODE=M172DM;LINKAGE=C2

NODE=M172W

NODE=M172W

$D_{s0}^*(2317)^\pm$ DECAY MODES $D_{s0}^*(2317)^\pm$ modes are charge conjugates of modes below.

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 D_s^+ \pi^0$	seen
$\Gamma_2 D_s^+ \gamma$	
$\Gamma_3 D_s^*(2112)^+ \gamma$	
$\Gamma_4 D_s^+ \gamma\gamma$	
$\Gamma_5 D_s^*(2112)^+ \pi^0$	
$\Gamma_6 D_s^+ \pi^+ \pi^-$	
$\Gamma_7 D_s^+ \pi^0 \pi^0$	not seen

 $D_{s0}^*(2317)^\pm$ BRANCHING RATIOS

$\Gamma(D_s^+ \pi^0)/\Gamma_{\text{total}}$	Γ_1/Γ
<u>VALUE</u>	<u>EVTS</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
seen	1540 \pm 62 AUBERT 03G BABR 10.6 e ⁺ e ⁻
$\Gamma(D_s^+ \gamma)/\Gamma(D_s^+ \pi^0)$	Γ_2/Γ_1
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.05	90 MIKAMI 04 BELL 10.6 e ⁺ e ⁻
• • • We do not use the following data for averages, fits, limits, etc. • • •	
<0.14	95 AUBERT 06P BABR 10.6 e ⁺ e ⁻
<0.052	90 BESSON 03 CLE2 10.6 e ⁺ e ⁻
$\Gamma(D_s^*(2112)^+ \gamma)/\Gamma(D_s^+ \pi^0)$	Γ_3/Γ_1
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.059	90 BESSON 03 CLE2 10.6 e ⁺ e ⁻
• • • We do not use the following data for averages, fits, limits, etc. • • •	
<0.16	95 AUBERT 06P BABR 10.6 e ⁺ e ⁻
<0.18	90 MIKAMI 04 BELL 10.6 e ⁺ e ⁻
$\Gamma(D_s^+ \gamma\gamma)/\Gamma(D_s^+ \pi^0)$	Γ_4/Γ_1
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.18	95 AUBERT 06P BABR 10.6 e ⁺ e ⁻
• • • We do not use the following data for averages, fits, limits, etc. • • •	
not seen	AUBERT 03G BABR 10.6 e ⁺ e ⁻
$\Gamma(D_s^*(2112)^+ \pi^0)/\Gamma(D_s^+ \pi^0)$	Γ_5/Γ_1
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.11	90 BESSON 03 CLE2 10.6 e ⁺ e ⁻
$\Gamma(D_s^+ \pi^+ \pi^-)/\Gamma(D_s^+ \pi^0)$	Γ_6/Γ_1
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.004	90 MIKAMI 04 BELL 10.6 e ⁺ e ⁻
• • • We do not use the following data for averages, fits, limits, etc. • • •	
<0.005	95 AUBERT 06P BABR 10.6 e ⁺ e ⁻
<0.019	90 BESSON 03 CLE2 10.6 e ⁺ e ⁻
$\Gamma(D_s^+ \pi^0 \pi^0)/\Gamma(D_s^+ \pi^0)$	Γ_7/Γ_1
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.25	95 AUBERT 06P BABR 10.6 e ⁺ e ⁻

 $D_{s0}^*(2317)^\pm$ REFERENCES

AUBERT	06P	PR D74 032007	B. Aubert <i>et al.</i>	(BABAR Collab.)
AUBERT	04E	PR D69 031101	B. Aubert <i>et al.</i>	(BABAR Collab.)
AUBERT,B	04S	PRL 93 181801	B. Aubert <i>et al.</i>	(BABAR Collab.)
MIKAMI	04	PRL 92 012002	Y. Mikami <i>et al.</i>	(BELLE Collab.)
AUBERT	03G	PRL 90 242001	B. Aubert <i>et al.</i>	(BaBar Collab.)
BESSON	03	PR D68 032002	D. Besson <i>et al.</i>	(CLEO Collab.)
KROKOVNY	03B	PRL 91 262002	P. Krokovny <i>et al.</i>	(BELLE Collab.)

NODE=M172215;NODE=M172

NODE=M172

DESIG=1

DESIG=2

DESIG=3

DESIG=4

DESIG=5

DESIG=6

DESIG=7;OUR EVAL; \rightarrow UNCHECKED \leftarrow

NODE=M172220

NODE=M172R1

NODE=M172R1

NODE=M172R5

NODE=M172R5

NODE=M172R6

NODE=M172R6

NODE=M172R7

NODE=M172R7

NODE=M172R8

NODE=M172R8

NODE=M172R9

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NODE=M172R10

NODE=M172R10

NODE=M172

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REFID=49417

REFID=49583

REFID=49615